

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of:)	
)	
)	
Amendment of the Commission's Rules with)	GN Docket No. 13-185
Regard to Commercial Operations in the 1695-)	
1710 MHz, 1755-1780 MHz, and 2155-2180)	
MHz Bands)	
)	
Service Rules for Advanced Wireless Services)	WT Docket No. 07-195
in the 2155-2175 MHz Band)	(Proceeding Terminated)
)	
Service Rules for Advanced Wireless Services)	WT Docket No. 04-356
in the 1915-1920 MHz, 1995-2000 MHz, 2020-)	(Proceeding Terminated)
2025 MHz, and 2175-2180 MHz Bands)	
)	
Applications for License and Authority to)	WT Docket No. 07-16
Operate in the 2155-2175 MHz Band)	(Proceeding Terminated)
)	
Petitions for Forbearance Under 47 U.S.C. §)	WT Docket No. 07-30
160)	(Proceeding Terminated)
)	

REPLY COMMENTS OF MOTOROLA MOBILITY LLC

Motorola Mobility LLC ("Motorola Mobility") hereby submits the following reply comments in the above-referenced proceeding that addresses commercial operations in the 1695-1710 MHz, 1755-1780 MHz, 2020-2025 MHz, and 2155-2180 MHz ("AWS-3") spectrum bands.¹ As further discussed below, Motorola Mobility recommends that the Federal Communications Commission ("FCC" or "Commission") adopt the consensus recommendation of the wireless industry that the Commission reject the proposed power limit for mobile handsets

¹ See Amendment of the Commission's Rules with Regard to Commercial Operations in the 1695-1710 MHz, 1755-1780 MHz, and 2155-2180 MHz Bands, *et al.*, GN Docket No. 13-185, *Notice of Proposed Rulemaking*, FCC 13-102 (rel. July 23, 2013) ("Notice").

operating in the 1695-1710 MHz and 1755-1780 MHz AWS-3 bands and instead adopt limits consistent with those previously adopted for AWS-1 devices.

In its initial comments, Motorola Mobility reiterated its support for the Commission's ongoing efforts to make both licensed and unlicensed spectrum available to address the ever-growing demand for wireless broadband services.² Noting that each of the AWS-3 spectrum bands are immediately adjacent to other existing mobile broadband allocations, Motorola Mobility urged the Commission to adopt AWS-3 service rules that are based, to the greatest extent possible, on those applied to the AWS-1 and AWS-4 bands, and on international standards.³ In this way, the Commission can accelerate the use of this spectrum and maximize efficiencies in terms of device and network design for AWS-3 services.

Along these lines, Motorola Mobility recommended that the Commission not adopt the *Notice's* proposal to limit the power of AWS-3 mobile devices in the 1695-1710 MHz and 1755-1780 MHz bands to 100 mW (+20 dBm) EIRP.⁴ Motorola Mobility pointed out that this proposal does not comport with 3GPP standards and is significantly below the limits applicable to AWS-1 devices operating in the adjacent band.⁵ Adopting the proposed +20 dBm EIRP limit could undermine the successful deployment of this spectrum as current devices and networks are designed and deployed in conformity with the 3GPP standards and requiring AWS-3 devices to abide by a non-standard power limit will force network operators to decide between costly

² Comments of Motorola Mobility LLC, GN Docket No. 13-185, September 18, 2013, at 2 (“Comments of Motorola Mobility”). Unless otherwise noted, all referenced pleadings in this document were submitted in GN Docket No. 13-185 on September 18, 2013.

³ *Id.* at 10.

⁴ *Notice* at ¶¶ 102-103.

⁵ *Id.* at 6.

network modifications or deploying AWS-3 devices with limited utility in existing network topologies.⁶

Other wireless carriers and equipment manufacturers echoed these concerns and recommendations. CTIA argued that there “there is no basis” for limiting mobile device EIRP as proposed and instead urged the Commission to “look to the technical power limits for mobile devices in the AWS-1 rules for guidance on how to develop power limits for the AWS-3 band.”⁷ Similarly, AT&T stated that a +20 dBm EIRP limit on AWS-3 mobile devices would “effectively require the adoption of a separate 3GPP standard for AWS-3.”⁸ AT&T further argues that “[f]orcing AWS-3 onto a separate, different 3GPP standard for AWS-3 would outweigh any benefit” that might accrue from reducing the transmit power, such as reducing the coordination requirements with potentially affected Federal Government users.⁹

Ericsson and Nokia also argue that limiting the power of AWS-3 devices to +20 dBm EIRP is unnecessary and suggest that the limit should be increased to AWS-1 levels. Noting that AWS-1 devices operating at 1710-1755 MHz operate in the same band as the protected Government operations and are permitted to operate with up to 1 watt EIRP (+25 dBm), Ericsson states that it is unnecessary to limit uplink power in the adjacent AWS-3 band to +20 dBm EIRP as AWS-3 devices will not present the same interference concerns.¹⁰ Ericsson also argues that the benefits of a higher power limit would outweigh the increased burden of having to coordinate

⁶ Comments of Motorola Mobility at 9.

⁷ Comments of CTIA – The Wireless Association at 26.

⁸ Comments of AT&T Inc. at 11.

⁹ *Id.*

¹⁰ Comments of Ericsson at 7.

more commercial operations with Federal incumbents.¹¹ Nokia also cites to the capabilities of LTE's sophisticated Transmit Power Control so as not to cause any interference to Government users.¹² Nokia recommends that commercial licensees be allowed the flexibility to use the maximum transmit power allowed in the LTE standards if this is not causing any interference to the government operations.¹³

Motorola Mobility agrees with these commenters and joins them in recommending that the Commission adopt power limits for AWS-3 handsets that are consistent with those applicable to AWS-1 devices. This approach should be coupled with the adoption of a two-tier coordination framework based on the AWS-1 rules to protect Federal Government facilities.¹⁴ In fact, it is unclear that there is any need to deviate from the existing Part 27 coordination requirements if applied to the AWS-3 bands.¹⁵ In the unlikely case that Government users experience interference, post-deployment remediation can be accomplished by configuring the LTE base station equipment to restrict handset operating power in the disputed areas.

Spectrum sharing between commercial and Federal Government users will not be ubiquitous but will be limited to certain geographical areas surrounding the protected facilities.¹⁶ This environment calls for site-specific coordination rather than the adoption of technical standards that are universally applied. As previously shown, limiting handset power to +20 dBm EIRP is not necessary to ensure compatibility between the two services. As Motorola Mobility

¹¹ *Id.*

¹² Comments of Nokia Solutions and Networks at 20.

¹³ *Id.* at 21.

¹⁴ Comments of CTIA – The Wireless Association at 26.

¹⁵ Comments of AT&T at 12.

¹⁶ Ericsson states that the 27 protected Government sites cover approximately 10 percent of the population. Comments of Ericsson at 7.

discussed in its initial comments, the analysis prepared by the Commerce Spectrum Management Advisory Committee (“CSMAC”) that shows compatibility with commercial devices limited to +20 dBm was overly conservative and did not represent the real-world interference environment between Federal and commercial users.¹⁷ The interference in real world scenarios will be less than that considered in the CSMAC analysis, thus justifying the adoption of a higher power limit in the Commission’s rules.¹⁸ For these reasons, the Commission should reject its proposal to limit devices to +20 dBm EIRP and should instead apply the AWS-1 power limits to the AWS-3 spectrum band.

Respectfully submitted,

/s/ Melissa Glidden Tye
Melissa Glidden Tye
Head of Federal Policy
Motorola Mobility LLC
1101 New York Ave., N.W.
Suite 210
Washington, D.C. 20005

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¹⁷ Motorola Mobility Comments at 7.

¹⁸ *Id.* at 8. In its comments, Motorola Mobility stated that if the CSMAC analysis had properly modeled signal losses due to RF absorption and reflection by the human body as well as additional losses caused by terrain, foliage, buildings, and various other obstructions, consideration of handset power greater than +20 dBm would not have changed its positive conclusions.